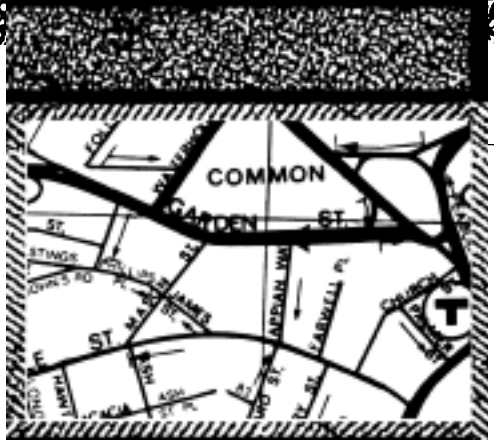

TWO

2

Analysis/Context

2. ANALYSIS/CONTEXT

I. The Role Walking Plays in Cambridge

Everyone is a pedestrian sometimes. Even habitual motorists turn into pedestrians when they park their cars. People who take public transportation generally walk some distance at one or both ends of their trips.

Some people depend heavily on walking:

- People who don't own cars
  Of the city's 39,405 households, 11,107, or 28.2%, have no car, according to the 1990 US Census (see Appendix IV).
- Children and adolescents
  Children under sixteen can't drive, and many Cambridge high school students over sixteen do not drive or do not have regular access to a car.[4]
- People with disabilities
  Many people, including many elderly people, have disabilities that preclude driving.
- College students
  Harvard University and Massachusetts Institute of Technology (MIT) actively discourage students from bringing cars to Cambridge.

Equitable access to the city for everyone who lives or works in Cambridge requires safe, convenient year-round pedestrian facilities.

People walk for many reasons. Among the most prominent are:

- Commuting
  According to the 1990 US census, 25.4% of Cambridge residents walk to work and 24.5% take transit. This includes college students going to class. Of the 107,000 people who work *in* Cambridge, 13.3% walk to work, and 21.3% take transit. A 1994 survey found that about 11% of the people who work *for* the City walk to work.

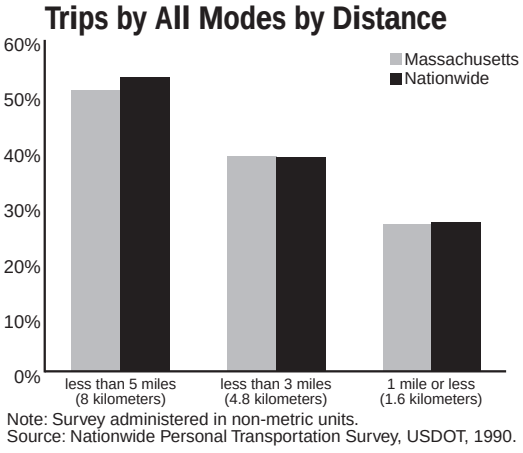

Figure 1: Trips by All Modes by Distance.

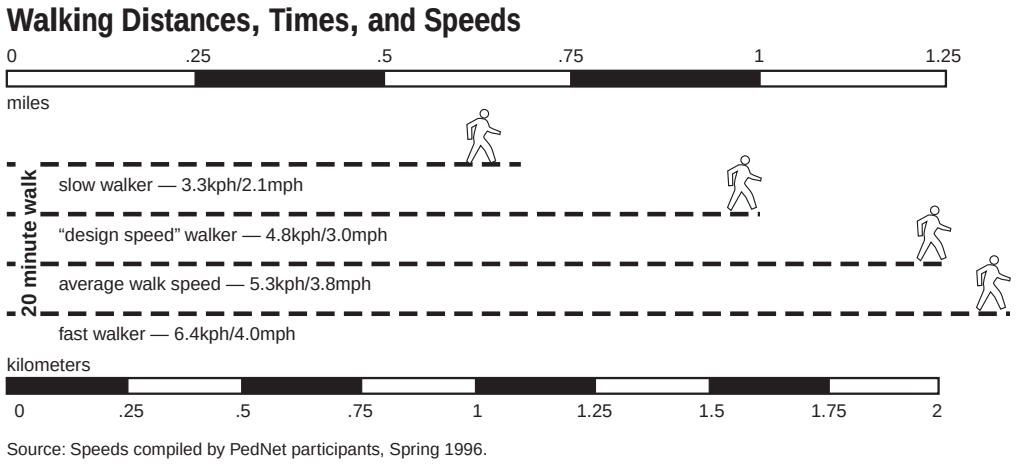

Figure 2: Walking Distances, Times, and Speeds.

4 Children in cities such as Cambridge are often more mobile than suburban children because they can get around more easily on foot, by bicycle, or by transit.

- Travel to Other Destinations

  Most Cambridge residents live within a half mile of frequent destinations—a store, friend's house, library, park, etc.—and many people walk regularly to one or more of these destinations.

- Recreation

  For many people, walking is enjoyable. Walking for recreation is popular because it is relaxing, has health benefits, and offers a chance to be outdoors and to enjoy city life and nature.

II. The Pedestrian Realm

A. What Is Urban Design?

When considering how the city works for pedestrians, urban design is an essential element. In its most complete sense, urban design addresses all the ways that a city is structured. Urban design is often more narrowly defined as involving physical elements in the environment, such as streets and sidewalks, landscaping, lighting, signs, and benches. Both definitions are helpful in developing a pedestrian plan.

B. What Is the Pedestrian Realm?

The pedestrian realm includes walkways and open space. Pedestrian walkways are "prepared exterior routes designed to provide pedestrian accessibility. Walkways are general pedestrian routes, including plazas and courts, and sidewalks are walkways that parallel a vehicular roadway." [5]

Plazas are outdoor spaces, open to the public, where pedestrians can pass through or gather. Often they are located at the intersection of two or more streets. Courts are indoor gathering places, often privately owned but open to the public.

Crosswalks are where the pedestrian travel path extends across a roadway (see Chapter 4, IV for a detailed description).

5 US Dept. of Transportation Federal Highway Administration, *Planning, Design and Maintenance of Pedestrian Facilities* (March 1989), Publication No. FHWA-IP-88-019, p. 75.

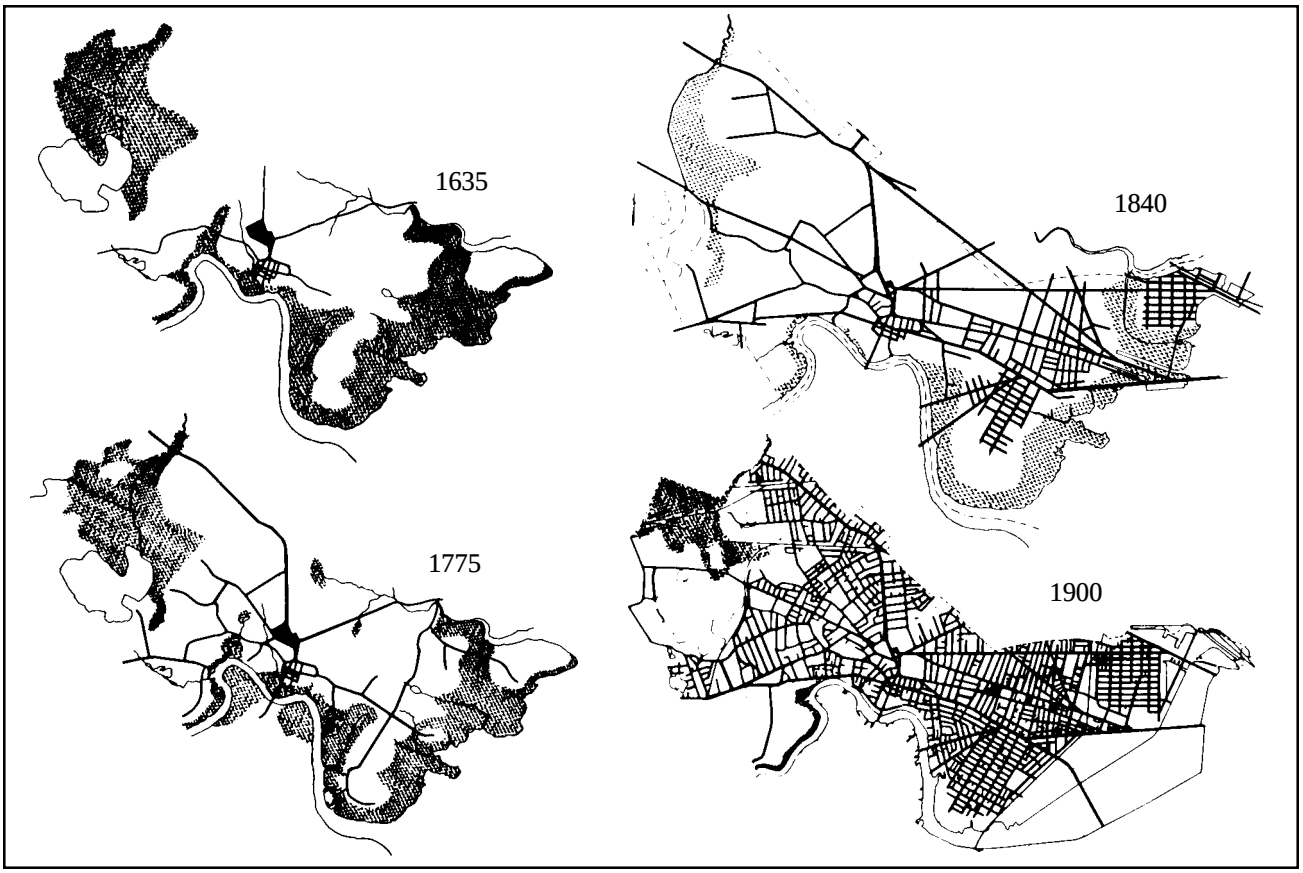

Figure 3: Four maps prepared by the Cambridge Historical Commission show street development of the territory that now makes up the City of Cambridge. The dates are approximate. The shaded areas represent marshes and mudflats that were eventually filled. The 1840 map clearly shows the three independently developing parts: Old Cambridge, Cambridgeport, and, at far right, rimmed by marshes, East Cambridge.

III. The Cambridge Pedestrian Realm

A. Historical Background

Over the past 350 years, Cambridge has grown incrementally, leaving us with varied conditions for walking. Inviting areas such as Harvard Square contrast with some that are quite unwelcoming to pedestrians, such as North Point and Alewife.

European settlement began in 1629, but for over two hundred years there was no city called Cambridge. Newtowne (around Harvard Square) and East Cambridge were independent villages separated by open space and farmlands. Some major streets were built to lead to bridges over the meandering Charles River to Boston. This combination of history and geography led to a layout of fairly long, straight major streets that resembled webs rather than a grid. In 1846 Cambridge was incorporated, and by 1900 the city was much more connected, with the development of fill-in streets in the emerging neighborhoods and railroad lines serving the newly created industrial areas. The city became densely populated, and in recent years the industrial sectors have become high-tech employment centers. The present street pattern reflects the city's evolution.

Because Cambridge was largely developed before the automobile was invented, much of it is built on a scale that accommodates people on foot

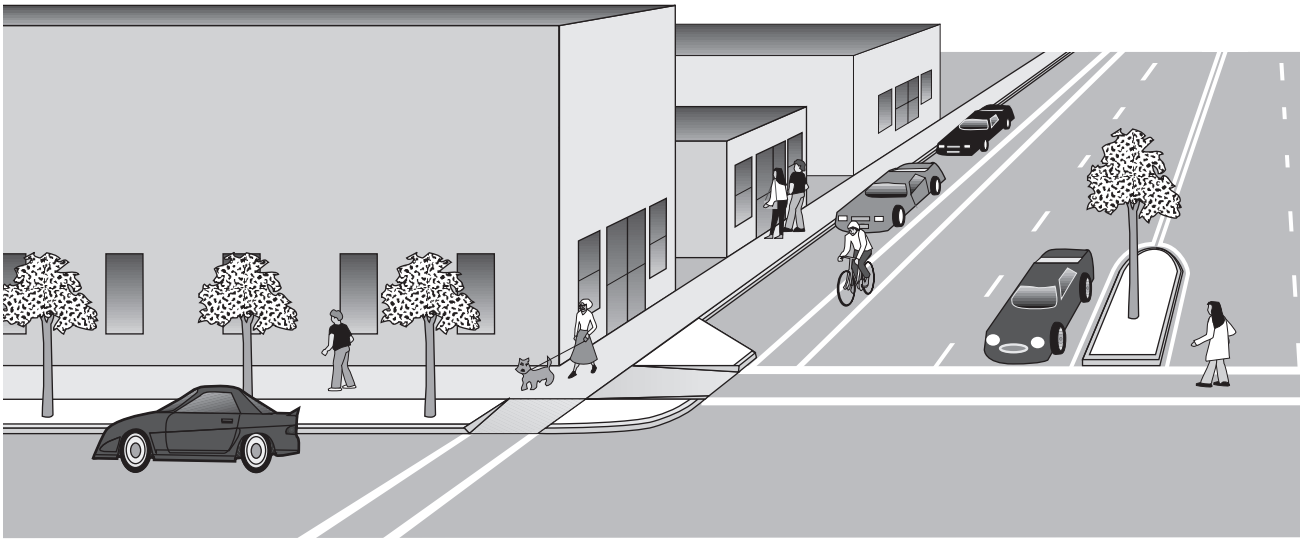

Figure 4: A city street that accomodates all modes of travel.

rather than people in cars. Parking is scarce in many parts of the city. A mixture of land uses means a variety of stores and services are within easy walking distance for most residents. Much of Cambridge is closer to downtown Boston than are some of Boston's own residential neighborhoods.

B. The Cambridge Walkway System

The Cambridge walkway system connects inside and outside as it wends from private lobbies and plazas to public sidewalks, streets, and parklands. To describe how this system should work, it is useful to determine whether there are missing links or opportunities to extend the system. To develop standards for improving the system, it is useful to consider the implications for both public and private spaces.

There are many public spaces such as City Hall and other City office buildings, schools, T stations, libraries, and parks that make up special parts of the public domain. However, most urban space for pedestrians is formed by the coming together of public sidewalks with buildings. While a positive interaction between those components is necessary to make fully livable urban places, the public sector must take the lead in making good walkways.

Blank walls create an alienating environment.

C. Private Spaces

The most important aspects of the private edges of urban spaces are building entries and facades, ground-floor stores, and placement of parking, service drives, and curb cuts. To the extent possible, private abutters to public spaces should be encouraged to make it possible for "eyes on the street" to provide the informal human surveillance that is so important to safety. Furthermore, spaces are more appealing when there is a visual interconnection between inside and outside. Blank walls do not make good edges for public spaces.

Where possible, private walls should include some protection from rain and wind, such as awnings, overhangs, or recessed doorways, especially at places where people gather, e.g., bus stops or building entries.

Cambridge has many private open spaces that function as gathering spaces or important walkways. For example, Au Bon Pain in Harvard Square greatly enlivens the space around it. On a larger scale, the Harvard and MIT campuses are extremely important parts of the Cambridge pathway system. The

universities should be encouraged to continue to make the public feel welcome in these special places.

D. Public Spaces

Unlike many newer American communities, Cambridge already has sidewalks in place on both sides of almost all its streets. Many of these sidewalks need to be improved, however. Sidewalk design should take into account various concerns: width, materials, continuity, appeal, cleanliness, obstructions, amenities (benches, signs, plants, etc.), and bus stops (shelters, signs, maps).

E. Streets

Most Cambridge streets are at a pedestrian scale.

The streets of Cambridge range from multilane roads with heavy through traffic that are part of the principal arterial system (e.g., Msgr. O'Brien Highway at Lechmere or Alewife Brook Parkway) to minor arterial streets (e.g., Cambridge Street or Mass. Ave.) to collector streets (e.g., Harvard Street or Garden Street), to quiet neighborhood streets (e.g., Chestnut or Highland). The issues for pedestrians vary accordingly. A description of the street classification system is in Appendix V.

The pattern of development in Cambridge has led to some complex intersections at which numerous streets come together at complex angles. On the positive side, this condition creates spatial interest, including many buildings with triangular plans and a variety of perspectives that a simpler grid of streets doesn't offer. On the negative side, it is often hard for newcomers or visitors to orient themselves, and it can be difficult to provide traffic signals or other traffic control measures that work well for both pedestrians and vehicles.

Neighborhood Streets

Cambridge has an array of pleasant streets in its historic and varied neighborhoods. These streets are generally quite livable. However, there are some trouble spots that need to be addressed, through physical design, changes in signalization, or in some other way. The City has begun to undertake traffic calming projects—alterations to the road to slow vehicle traffic. These enhancements are intended to help de-emphasize motor vehicle traffic while making streets safer and more walkable. For example, a project at the Garden Street-Concord Avenue intersection at Arsenal Square involved simplifying the intersection by extending the Garden Street sidewalk and blocking the automobile connection from Follen Street. Some measures involve redoing intersections to slow vehicular traffic and reduce the expanse of roadway that pedestrians must cross. (See Chapter 4 for a description of traffic calming measures).

F. Campuses

Harvard, MIT, Lesley College, and myriad smaller institutions help give Cambridge its special character. The Harvard and MIT campuses offer miles of pleasant paths and open spaces. At the same time, opportunities for improvement remain at the public edges of the campuses. For example, the City, Harvard University, and neighborhood residents and business owners worked cooperatively to transform the uninviting expanse of asphalt at Quincy Square into a more attractive open space.

G. Open Space

Cambridge has several kinds of open space: urban wilds (areas of special natural interest), multiuse green space, City parks, MDC recreation areas, and urban public squares.

Urban Wilds

The MDC's Alewife Reservation includes trails but is otherwise without amenities. It provides opportunities for viewing wildlife and enjoying an uncultivated landscape.

Multiuse Green Spaces

The city's major green spaces serve many purposes. Mt. Auburn Cemetery, the nation's first rural garden cemetery, which is partly in Cambridge, is popular for walking and bird watching. Fresh Pond Reservation, which holds the city's drinking water, is heavily used by recreational walkers and runners. The MDC reservation along the Charles River is a major travel corridor for motorists and cyclists and is popular with recreational walkers and inline skaters. It also serves as a destination for passive recreation and a site for special events. Its bicycle path is narrow and often crowded, leading to conflict among user groups (cyclists, pedestrians, inline skaters). Some stretches of Memorial Drive, the MDC road that borders the reservation, are obstacles for people who want to reach the bicycle path and the river.

City Parks

City parks have many designs and serve many purposes. Danehy Park has playing fields and other active recreation facilities. Cambridge Common is a historic site, a travel corridor for pedestrians and cyclists, and a passive recreation site and has an athletic field and a tot lot. Many neighborhood parks have play equipment for young children.

Visual Parks

The city has a number of very small roadside public spaces, many of which are unattractive and rarely used. Some of them could be redesigned to serve as pedestrian rest stops or provide some visual roadside relief. DPW does provide plantings in these areas and plants containers on sidewalks at the request of residents and business owners, who agree in return to maintain them.

Cafés and street musicians enliven public spaces.

Urban Public Spaces

Harvard, Central, Porter, Kendall, and Inman squares are crossroads—not really squares at all, though most have some gathering space for pedestrians. As described below in chapter 6IIB, Harvard Square's evolution has been particularly complex. Cambridge's younger squares are centers of commerce and transportation, important to their surrounding neighborhoods and to regional users. They are, for the most part, vibrant public spaces. A key consideration for each is how to improve the environment for pedestrians while continuing to accommodate vehicular traffic. While the squares serve people who live or work nearby, they also attract visitors from beyond their immediate neighborhoods. They tend to lack public facilities for these visitors, e.g., rest rooms and pedestrian-oriented signs and maps.